(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 23 December 2004 (23.12.2004)

(10) International Publication Number WO 2004/112085 A3

(51) International Patent Classification': H01J 61/28,

(21) International Application Number:

PCT/IB2004/050904

15 June 2004 (15.06.2004) (22) International Filing Date:

(25) Filing Language: English

English (26) Publication Language:

(30) Priority Data: 03101807.0 19 June 2003 (19.06.2003)

- (71) Applicant (for all designated States except US): KONIN-KLLIKE PHILIPS ELECTRONICS N.V. (NL/NL): Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).
- (72) Inventors: and
- (75) Inventors/Applicants (for US only): DE MAN, Rolf, E. [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). DEURENBERG, Peter, H., F. [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). HENDRIKS, Theodorus, M. [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).
- (74) Agent: ROLFES, Johannes, G., A.; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, **ZW**.

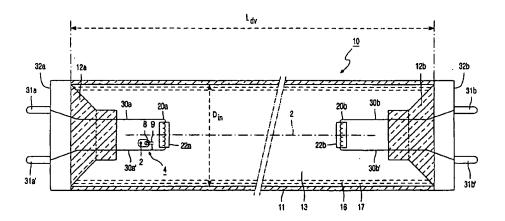
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG. PH. PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ,

[Continued on next page]

(54) Title: LOW-PRESSURE MERCURY VAPOR DISCHARGE LAMP



2004/112085 A3 ||||||||||| (57) Abstract: Low-pressure mercury vapor discharge lamp comprises a light-transmitting discharge vessel (10) enclosing, in a gastight manner, a discharge space (13) provided with a filling of mercury and a rare gas. The discharge vessel comprises discharge means (20a; 20b) for maintaining a discharge in the discharge space. The discharge vessel is provided with a container comprising an amalgam (2). The container is provided with releasing means (4) for the controlled release of mercury vapor from the amalgam. The releasing means is open during lamp operation and is substantially closed when, during lamp operation, the temperature of the amalgam becomes higher than a pre-determined temperature. Preferably, the pre-determined temperature corresponds to a temperature of a range of temperatures at which the mercury-vapor pressure above the amalgam is relatively stable.



WO 2004/112085 A3



BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:

with international search report

(88) Date of publication of the international search report: 9 March 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No PCT/IB2004/050904

			· · · · · · · · · · · · · · · · · · ·					
A. CLASSI IPC 7	FICATION OF SUBJECT MATTER H01J61/28 H01J61/72							
According to International Patent Classification (IPC) or to both national classification and IPC								
B. FIELDS	SEARCHED							
Minimum do IPC 7	ocumentation searched (classification system followed by classification $H01J$	on symbols)						
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched								
Electronic d	ata base consulted during the International search (name of data ba	se and, where practical, search terms used)					
EPO-Internal, PAJ								
C. DOCUM	ENTS CONSIDERED TO BE RELEVANT							
Category •	Citation of document, with indication, where appropriate, of the rel	evant passages	Relevant to claim No.					
Α .	GB 1 062 141 A (WESTINGHOUSE ELECTORY CORPORATION) 15 March 1967 (1967-page 1, lines 12-18 page 2, lines 20-28,70-75		1,8					
	page 2, 11nes 20-98 page 6, lines 43-111 figures 1,2,4,7,17-20,26							
A	PATENT ABSTRACTS OF JAPAN vol. 011, no. 077 (E-487), 7 March 1987 (1987-03-07) & JP 61 232548 A (MATSUSHITA ELEC CO LTD), 16 October 1986 (1986-10 abstract figures 3,4	4						
		-/						
		•						
			· · · · · · · · · · · · · · · · · · ·					
X Furth	ner documents are listed in the continuation of box C.	X Patent family members are listed in	annex.					
° Special ca	tegories of cited documents:	'T' later document published after the Inter						
"A" document defining the general state of the art which is not considered to be of particular relevance. "A" document defining the general state of the art which is not cited to understand the principle or theory underlying the								
"E' earlier document but published on or after the International filing date 'X' document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to								
which i	nt which may throw doubts on priority claim(s) or is cited to establish the publication date of another n or other special reason (as specified)	involve an inventive step when the doc "Y" document of particular relevance; the ci	cument is taken alone laimed invention					
"O" docume	O' document referring to an oral disclosure, use, exhibition or document is combined with one or more other such docu-							
other means "P' document published prior to the international filing date but later than the priority date claimed "A document member of the same patent family								
	actual completion of the international search	Date of mailing of the International sear						
2	1 October 2005	04/11/2005						
Name and n	nailing address of the ISA	Authorized officer						
·	European Patent Office, P.B. 5818 Patentiaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Gijsbertsen, J						

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IB2004/050904

		FC1/18200	04/050904 ———————————————————————————————————
	ation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with Indication, where appropriate, of the relevant passages		Relevant to claim No.
A .	PATENT ABSTRACTS OF JAPAN vol. 010, no. 205 (E-420), 17 July 1986 (1986-07-17) & JP 61 047056 A (TOSHIBA CORP), 7 March 1986 (1986-03-07) abstract figures 1,3		1,4,8
A	US 6 456 004 B1 (JOHNSON WAYNE D ET AL) 24 September 2002 (2002-09-24) cited in the application abstract column 2, lines 13-28 figures 2-4		1
A .	WO 00/51161 A (KONINKLIJKE PHILIPS ELECTRONICS N.V; PHILIPS CORPORATE INTELLECTUAL PR) 31 August 2000 (2000-08-31) page 1, lines 23-26 page 4, lines 23-26 page 5, lines 27-30 page 7, lines 23-26 page 8, lines 11-13 figures 4a-c,5		1,5-7
A	EP 1 047 110 A (MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD) 25 October 2000 (2000-10-25) figure 1 column 5, lines 17-33		1,9

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No PCT/IB2004/050904

					7 1020047 030304
Patent document cited in search repo		Publication date		Patent family member(s)	Publication date
GB 1062141	A	15-03-1967	BE	666597 A	. 03-11-1965
			DE	1246120 B	03-08-1967
			DE	1290257 B	06-03-1969
			DE	1287215 B	16-01-1969
			DE	1290631 B	13-03-1969
			ES	335661 A2	
			GB	1137010 A	18-12-1968
			GB	1137090 A	18-12-1968
•			GB	1175411 A	23-12-1969
			NL NL	6507948 A 6700706 A	10-01-1966 04-08-1967
			NL	6700762 A	04-08-1967
			NL	6700890 A	04-08-1967
			SE	328054 B	07-09-1970
			SE	328055 B	07-09-1970
			SE	328056 B	07-09-1970
			US	3422299 A	14-01-1969
			US	3534212 A	13-10-1970
			US	3619697 A	09-11-1971
JP 61232548	A	16-10-1986	NONE		
JP 61047056	A	07-03-1986	NONE		
US 6456004	B1	24-09-2002	NONE		
WO 0051161	Α	31-08-2000	CN	1302449 A	04-07-2001
			JP	2002538583 A	12-11-2002
			TW	548681 B	21-08-2003
			US	6404122 B1	11-06-2002
EP 1047110	Α	25-10-2000	CN	1271960 A	01-11-2000
			US	6597105 B1	22-07-2003